ECE 530 Cloud Computing

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Deployment Models

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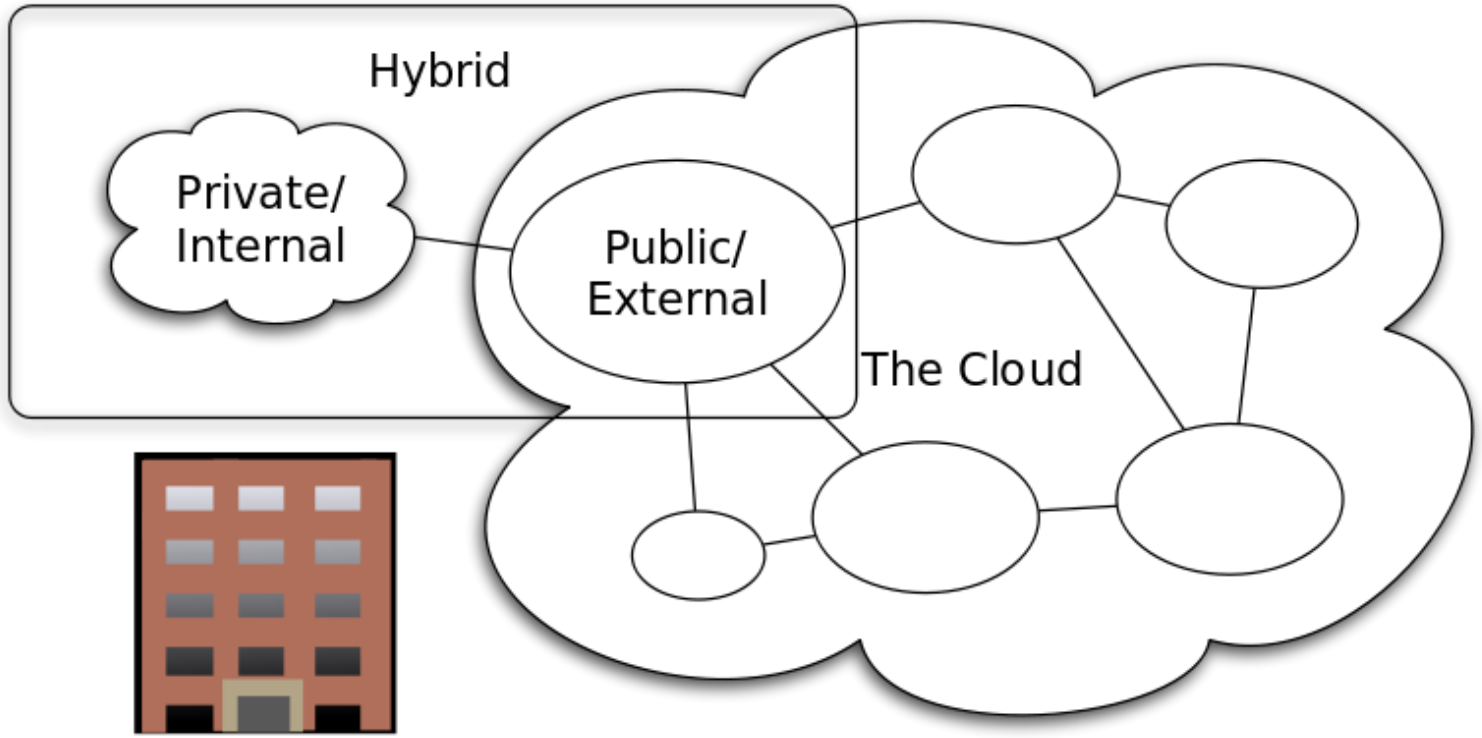

Cloud Computing Types

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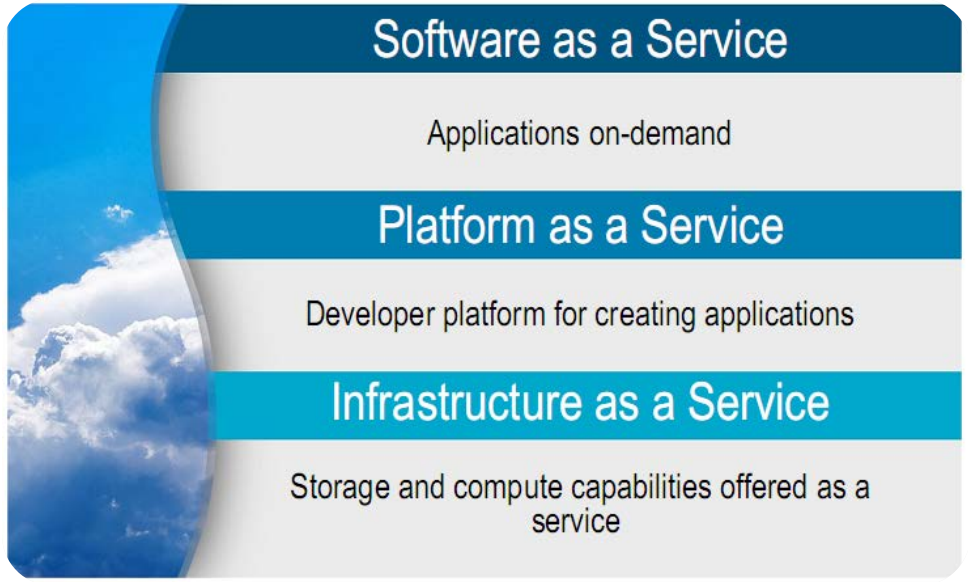
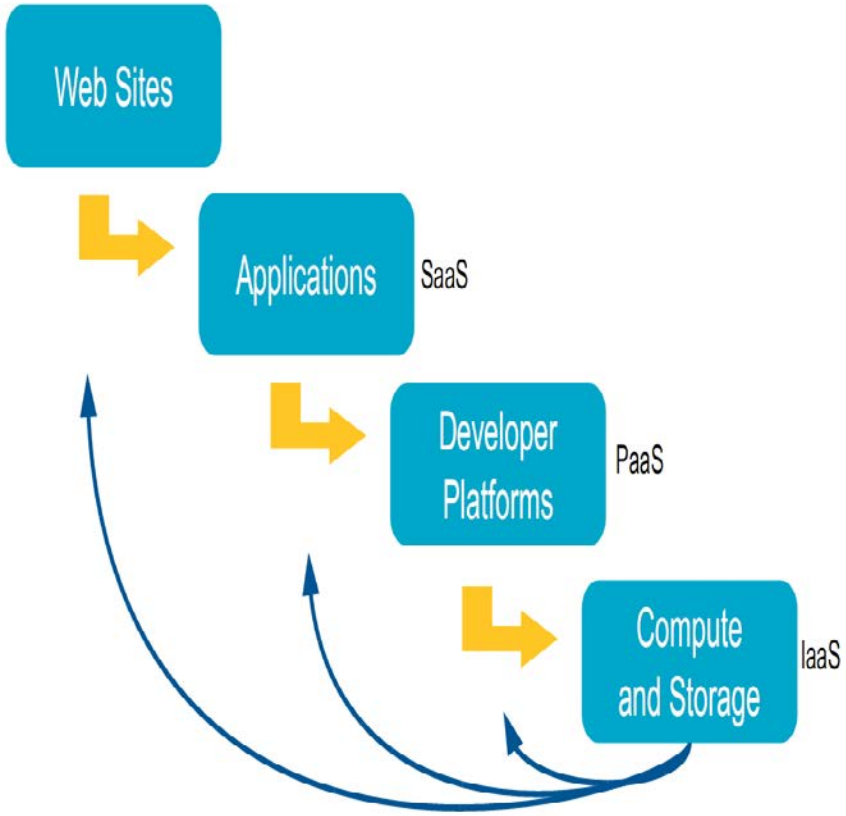
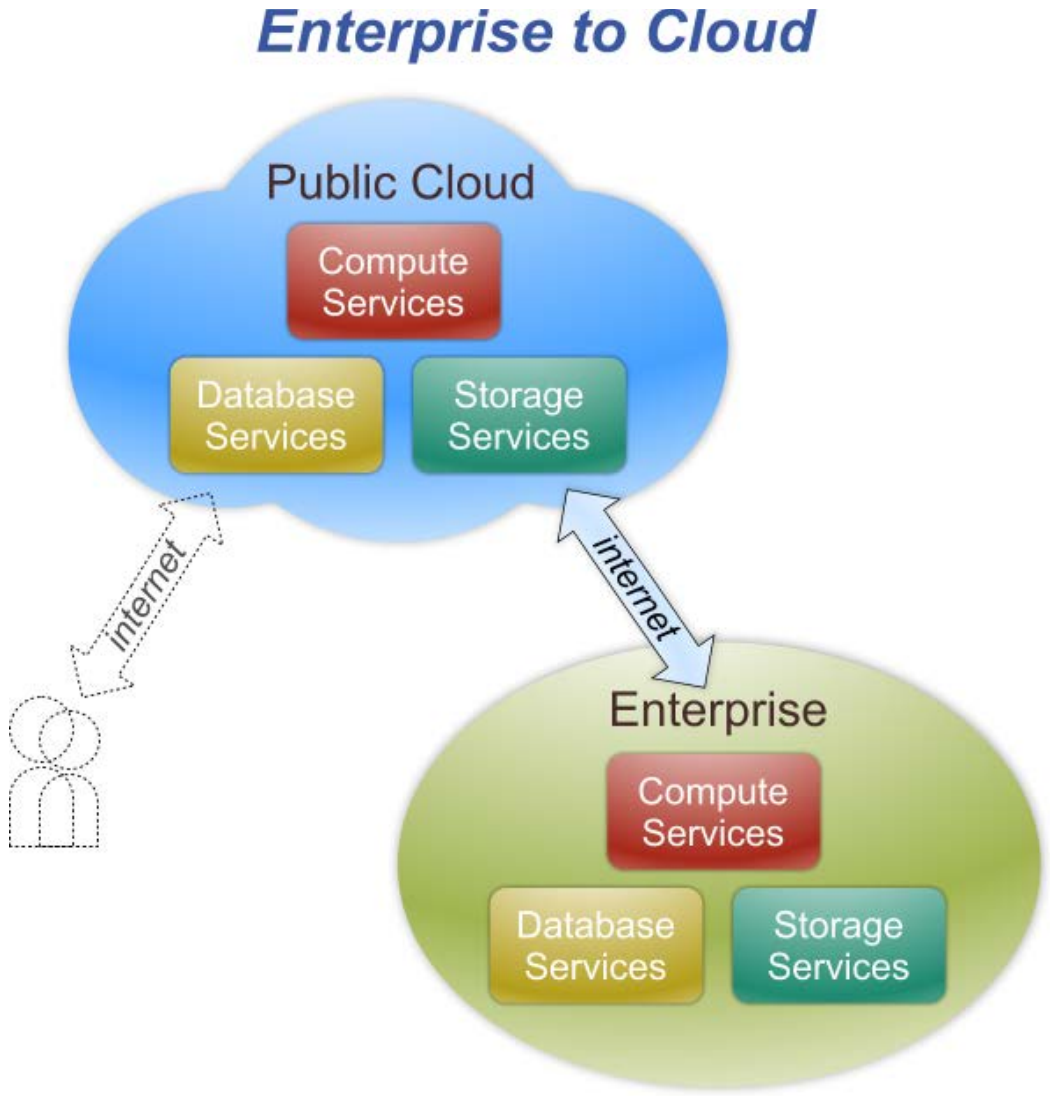
Natural Evolution of the Web





Source: Lew Tucker, Introduction to Cloud Computing for Enterprise Users

Four Deployment Models



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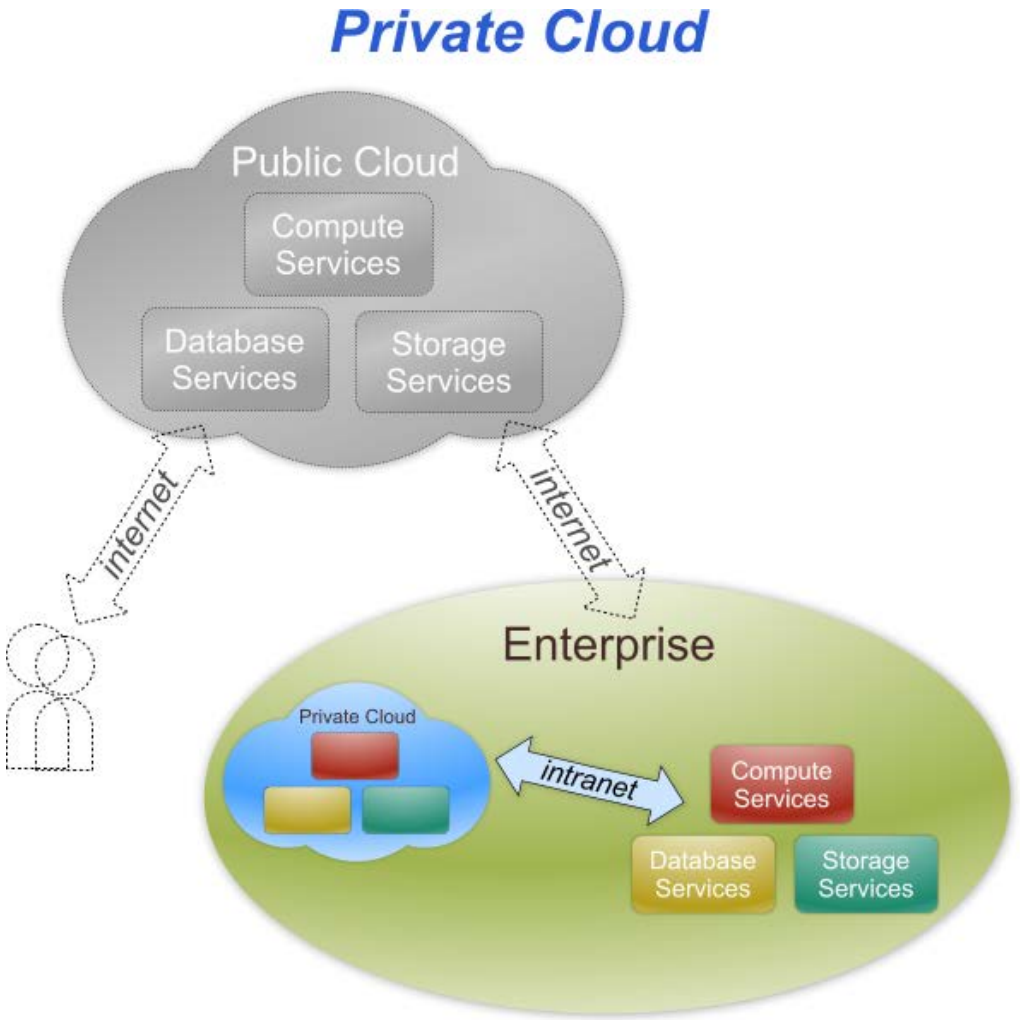
Four Deployment Models



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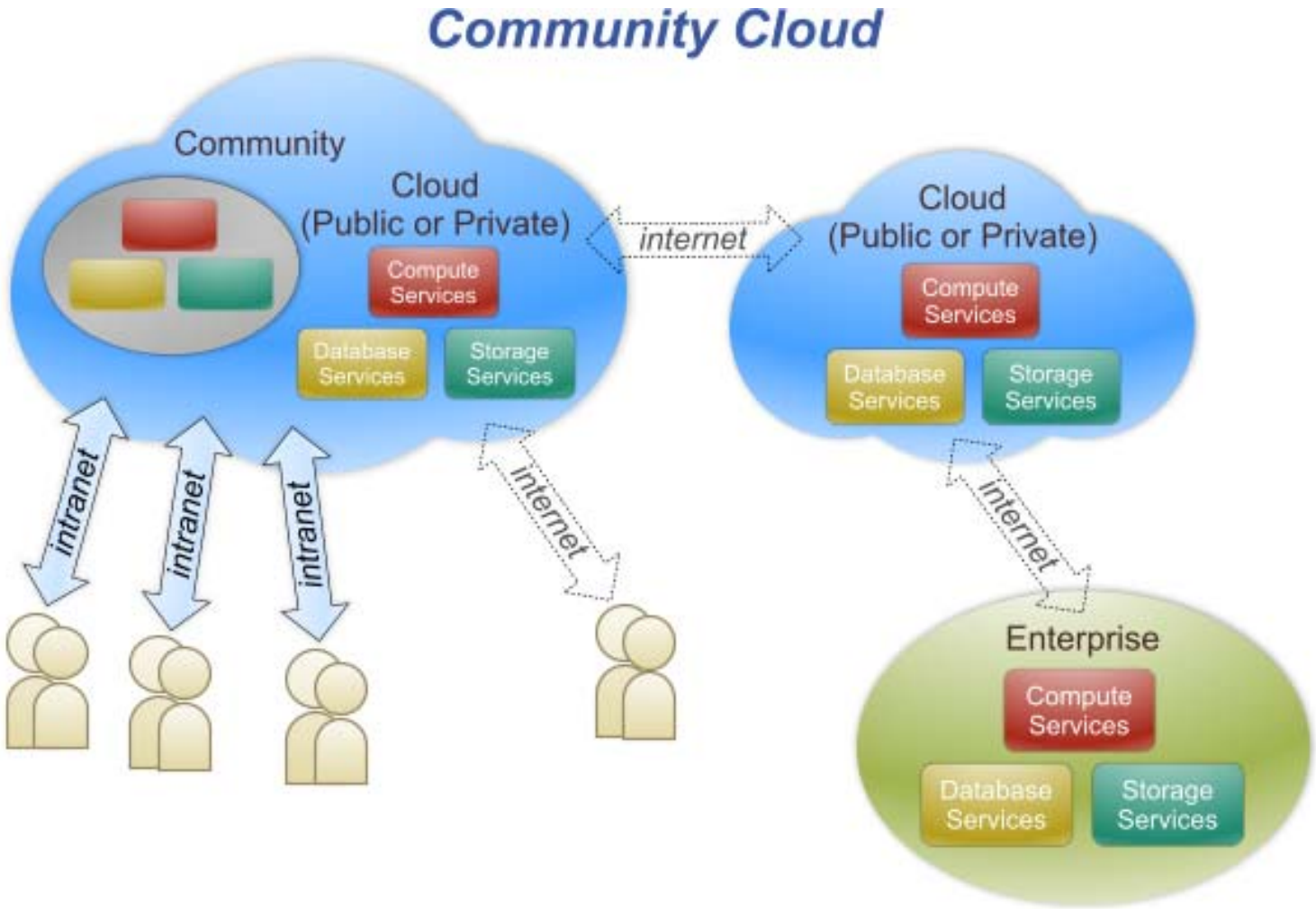
Four Deployment Models



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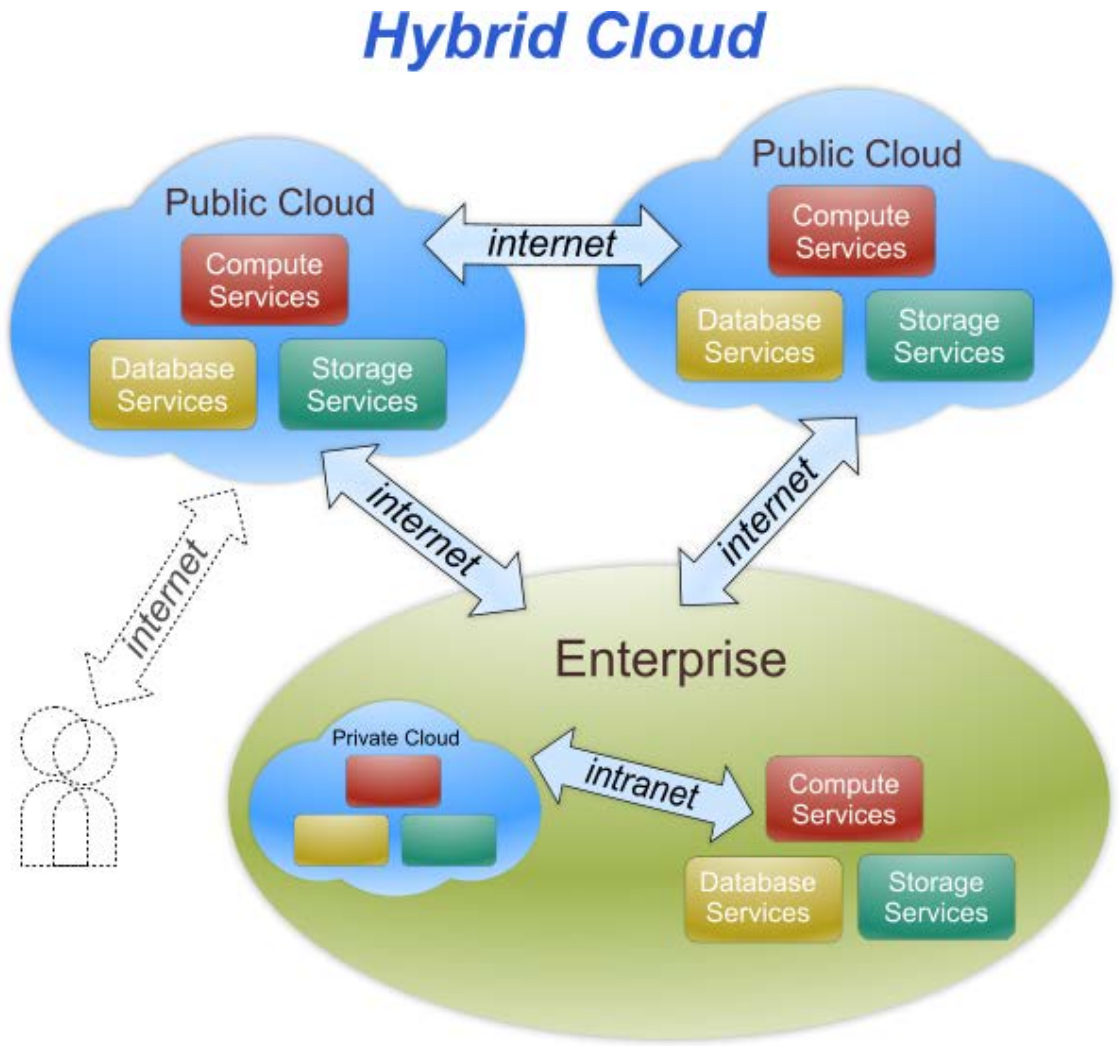
Four Deployment Models



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Public Cloud vs. Private Cloud

Rationale for Private Cloud:

- Security and privacy of business data was a big concern
- Potential for vendor lock-in
- SLA’s required for real-time performance and reliability
- Cost savings of the shared model achieved because of the multiple projects involving semantic technologies that the company is actively developing

Cloud Computing for the Enterprise
What should IT Do

- Revise cost model to utility-based computing: CPU/hour, GB/day etc.
- Include hidden costs for management, training
- Different cloud models for different applications - evaluate
- Use for prototyping applications and learn
- Link it to current strategic plans for Services-Oriented Architecture, Disaster Recovery, etc.

Cloud Computing Models

Cloud ⟷ Services ⟷ Users

Private

Public

Hybrid

Infrastructure-as-a-Service (IaaS)

Platform-as-a-Service (PaaS)

Browser Based Web Applications

Software-as-a-Service (SaaS)

Remote Monitoring
IoT
etc.

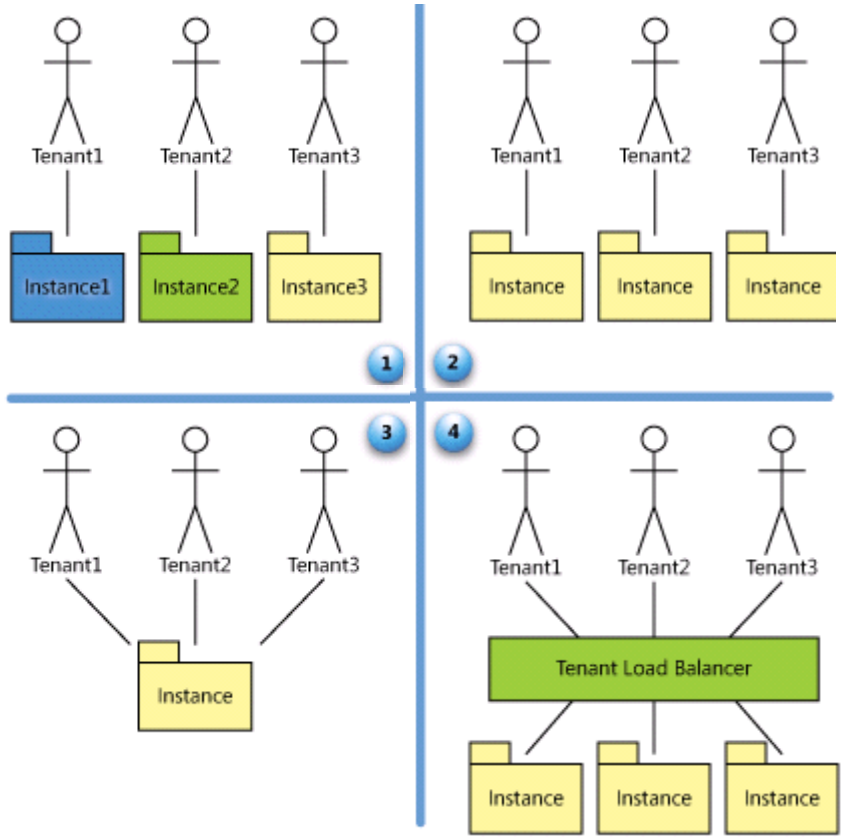
SaaS Maturity Model

Level 1: Ad-Hoc/Custom – One Instance per customer

Level 2: Configurable per customer

Level 3: configurable & Multi-Tenant-Efficient

Level 4: Scalable, Configurable & Multi-Tenant-Efficient



Source: Frederick Chong and Gianpaolo Carraro, "Architectures Strategies for Catching the Long Tail"

Software as a Service (SaaS)

- SaaS is a model of software deployment where an application is hosted as a service provided to customers across the Internet.
- SaaS alleviates the burden of software maintenance/support
  - but users relinquish control over software versions and requirements.
- Terms that are used in this sphere include
  - **Platform as a Servic**e (PaaS) and
  - **Infrastructure as a Service** (IaaS)